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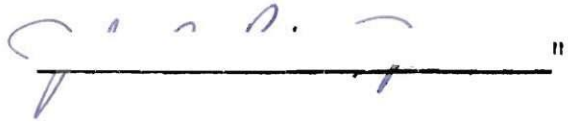

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AGRICULTURAL LAND USE IN METROPOLITAN AREAS

A THESIS

Presented to

the Faculty of the Graduate Division

by

John Ashcraft Bivens, Jr.

In Partial Fulfillment

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AGRICULTURAL LAND USE IN METROPOLITAN AREAS

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FOREWARD

The metropolitan areas of this country are growing at unprecedented rates and because of this explosive situation, the indiscriminate loss of fertile agricultural land in these areas has frequently been overlooked. Long-range policies which could avert this situation are essential.

This thesis points out the effect which unplanned metropolitan growth has on agriculture within the area and the role which agriculture plays in an urban setting. In addition, the policies which are being used for the preservation of agricultural land are discussed. Finally, some new ideas which may be of value in the preservation of agricultural land both for its productivity and as open space are presented.

The valuable assistance of Professors Howard K. Menhinick and Malcolm G. Little, Jr., of the Graduate City Planning Program of Georgia Institute of Technology and of Professor J. W. Fanning, Chairman of the Agricultural Economics Department of the University of Georgia, is gratefully acknowledged.

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This thesis is dedicated to my wife, Mary Alice, who has provided assistance, encouragement, and understanding during the preparation, revision, and completion of this work.

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SUMMARY

The purpose of this thesis is to determine the role of agricultural land in rapidly sprawling metropolitan areas and to determine ways of preserving prime agricultural land so that it may continue to serve its agricultural function and, at the same time, provide vitally needed open space in urban areas.

Metropolitan growth is occurring very rapidly in two ways: first, the population is increasing, and second, the area included within metropolitan regions is increasing--more land is devoted to urban uses.

This explosive metropolitan growth has exerted its influence on the agriculture in its path. Some of the effects of this growth in metropolitan areas are: (1) conversion of land to urban uses, (2) fragmentation of farms, (3) increased land values and increased taxes, and (4) increased wages and employment opportunities. Thus, highly productive agricultural land--vitally needed open space--has been lost to metropolitan growth.

Few areas are cognizant of the problem of diminishing prime agricultural land and even fewer governments have taken measures to alleviate the problem.

Comprehensive plans for the development of metropolitan

areas should be prepared only after determining the role of agriculture in the particular region. To ascertain the role of agriculture in the area, knowledge of the following is important: (1) land capabilities for production, (2) soil characteristics, (3) crops being produced, (4) farm products being imported from other areas, (5) possibilities for locally producing imported farm products, (6) economic value of agricultural products.

The pressures to subdivide farm land for urban uses are too great to expect individual land owners to retain their land for agricultural production without public assistance. Very few methods have been utilized for the preservation of agricultural land in metropolitan areas, and frequently, the devices which have been used were originally designed for other purposes.

The following measures are recommended for use in the preservation of agricultural land in metropolitan areas: (1) exclusive agricultural zoning which prohibits urban type development including residential, (2) a positive plan for the extension of utilities into selected areas and not elsewhere, (3) purchase of agricultural easements in unique situations, (4) public acquisition of property for the purpose of incorporating deed restrictions and then resale to private individuals, (5) public ownership--limited to unique

situations--with lease-back provisions, and (6) deferred taxation as a supplement to the immediately preceding (1), (2), and (4). These policies will prove more effective if used in conjunction with one another.

Agriculture is a land use in metropolitan areas--sound planning will include provisions for retaining such an important use.

CHAPTER I

METROPOLITAN GROWTH AND ITS EFFECT UPON AGRICULTURE

Fertile agricultural land is being usurped or engulfed by an exploding movement of people to metropolitan areas and by the dispersal of this metropolitan population from the central city toward the suburbs. This urban growth has followed no precise pattern but is frequently described as urban sprawl. The movement to metropolitan areas has been strongly influenced by economic conditions and technological advancements while the dispersal from the central city has been accelerated by automobile ownership and use, good highways, and the quest for inexpensive land to develop.

Metropolitan Growth

The metropolitan areas of this country are growing at fantastic rates, so that the United States is rapidly becoming a country of cities. Metropolitan growth is occurring chiefly in two ways: first, the population is surging upward, and second, the area included within metropolitan regions is increasing--more land is devoted to urban uses. Both of these growth patterns are discussed in detail in this section.

Population Distribution and Increases.--The population of this

nation is increasing and, coincident with this increase, there has been a redistribution of the inhabitants. For example, the proportion of the population of the United States in urban places of all sizes has increased from 6 per cent in 1800 to about 64 per cent today.[1] Most of the urban growth of recent years has taken place in the large metropolitan areas--those with 100,000 or more inhabitants. In 1900 these areas contained only 40 per cent of the nation's total population, and yet from 1900 to 1950 they received 72 per cent of the population increase.[2] The nation's total population increased by 19 million in the decade from 1940 to 1950. "Approximately 46 per cent of the increase was in the 25 largest metropolitan concentrations. This growth added 6 million inhabitants to already-congested central cities and another 9 million to the unprepared suburbs."[3]

The metropolitan areas of this country received almost all of the population increase from 1950 to 1955. Of the 11.8 million increase in population during this period, almost 98 per cent took place in metropolitan areas. The suburbs

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[1]Wilfred Owen, The Metropolitan Transportation Problem, Washington, D. C.: The Brookings Institution, 1956, p. 10.

[2]Donald G. Bogue, Metropolitan Growth and the Conversion of Land to Non-agricultural Uses, Scripps Foundation for Research in Population Problems, 1956, p. 1.

[3]Wilfred Owen, Op. Cit., p. 11.

received approximately seven times the growth experienced by the central city. "The growth of suburban development was greatest in territory classified as rural in 1950. These one-time rural areas gained 5.1 million persons."[4]

Exact figures are unavailable but, on the basis of recent population trends, a tremendously large current metropolitan population can be assumed. For example, early in 1959 the population of the United States was about 175 million. This estimate represents a population increase of 13.5 million from 1955 to 1959. If it is assumed that the metropolitan areas have received 98 per cent of this increase, as they did from 1950 to 1955, then these areas today have more than 108.5 million inhabitants. Table 1, "Civilian Population of the United States," in the years 1950 and 1955, shows the population for these years by area as well as the percentage increase. This table clearly illustrates the urban expansion movement--not only by population increase, but also by spreading out or sprawling.

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[4]Ibid., p. 11.

Table 1. Civilian Population of the United States, 1950 and 1955*

Type of Area	April 1950 (in thousands)	April 1955 (in thousands)	Percentage Increase
Total United States	149,634	161,461	7.9
Standard Metropolitan Areas	83,796	95,304	13.7
Central Cities	49,135	51,023	3.8
Outside Central Cities	34,661	44,281	27.8
Urban	23,710	28,236	19.1
Rural	10,951	16,045	46.5
Other Territory	65,838	66,157	0.5
Urban	23,067	24,217	5.0
Rural	42,771	41,940	- 1.9

*United States Bureau of the Census, "Civilian Population of the United States, by Type of Residence," Current Population Reports, Population Characteristics, Series P-20, No. 63, (November 2, 1955).

The Spread of Cities--Urban Sprawl.--Metropolitan population growth in itself is significant and astounding, but perhaps of more importance is the spreading out of this population. The spread of cities over broad territories began to pick up speed about 1920 and has been especially rapid since World War II.

The movement to the suburbs started as an escape from congestion--the desire for spacious living. Perhaps the greatest stimulant of this movement is that of improvements in transportation. The automobile has played a dominant role in urban sprawl since automobile ownership has increased. Wider and straighter highways, some of which have limited or controlled access, enable the urban worker to live in a suburban environment. Suburban living is no longer an upper-class privilege, since mass-commuting by automobile is possible by persons from all social strata.

The economic level of the American has experienced a sharp rise which in turn has enabled families to move to the suburbs and to live in single-family dwellings on large lots. Large lots for single-family dwellings have resulted in greater distances between neighbors and more space required to house a thousand persons.

The gravitational pull of the city starts at the center of gravity, the downtown district--the hub of maximum accessibility. It does not stop at the fringes but continues until it fades into nothing. The line between urban and rural areas has disappeared and defied recognition. The areas a city occupies are unknown, for no one knows where a city really ends.

Just outside the area of urban settlement, regardless of definition, there are those families that are tied to the

city and its economy by all-weather roads. They form a peripheral ring of rural non-farm dwellers. The area within this ring defies measurement because it is in a constant state of change. Even without accurate measurement, it may safely be said that the United States, on the whole, contains the most suburbanized cities of the world. No other nation has the transportation and communication facilities that permit such a sprawling of dwelling places throughout the countrysides surrounding an urban center.

The Effect of Metropolitan Growth on Agriculture

Metropolitan areas of the United States are experiencing growth--both by population redistribution and increase and by a spreading out or urban sprawl. As this growth has occurred, it has exerted its influence on the agriculture in its path. Some of the effects of metropolitan growth on agricultural land within the area are:

1. Conversion of land to urban uses.
2. Fragmentation of farms.
3. Increased land values and increased taxes.
4. Increased wages and employment opportunities.

An understanding of these effects is imperative if land-use planners, on the policy-making level as well as the technical level, are to be effective with their plans and controls for the development of metropolitan areas.

Conversion of Land to Urban Uses.--Development in metropolitan areas of this country has resulted in the conversion of agricultural land to urban uses. The extent of this loss of agricultural land is unknown because very little research has been conducted on this specific problem.

There are, however, some indications of the magnitude of this problem. Although exact figures are not available, records of incorporation of land into towns and cities, construction of factories, highways, airports, and new homes during the last 10 years show that probably as much as one million acres of land are absorbed annually by urban and related non-agricultural uses.[5] An estimate of the Soil Conservation Service, derived independently from the study by Mr. H. H. Wooten of the United States Department of Agriculture, agrees quite well with Wooten's estimate of one million acres of land lost annually to urban and related uses.

The following quotation from an article by Donald A. Williams, Administrator of the Soil Conservation Service, represents the present concern of many who are charged with conserving the agricultural resources of the nation:

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[5]H. H. Wooten, Major Uses of Land in the United States, Washington, D. C.: United States Department of Agriculture, 1953, pp. 10-11.

> I, personally, was amazed to find that our appraisal throughout the country indicates the trend of withdrawal of cultivatable land from agricultural uses is more than double what we thought it was. During the past 15 years our estimates show that about 17 million acres of our flattest and most fertile farmlands have been converted to non-agricultural uses. Each year over one million acres of cultivatable land is going into homesites, industrial and commercial developments, defense establishments, highways, airports, and other non-agricultural uses.[6]

While it is true that not all of the agricultural land lost in metropolitan areas has been converted to urban uses, these uses have, however, claimed the major share. About 40 per cent of the total cultivatable land withdrawn has gone into public uses such as military and defense installations, reservoirs, recreational areas, and similar uses. The remaining 60 per cent of the agricultural land diverted to non-agricultural uses went into highways, airports, private developments, industries, and cities.[7]

In the research which preceded this thesis, urban uses were included in a category along with highways and roads, parks, and military reservations. This category increased by 36 million acres of land between 1880 and 1950--an increase of about 24 per cent.[8] Although this is an

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[6]Donald A. Williams, "Soil and Water for the Future," Soil Conservation, United States Department of Agriculture, December, 1955, pp. 115-16.

[7]Ibid., pp. 115-16.

[8]Donald Bogue, Op.Cit., p. 3.

indirect measure of urban land-use requirements, because of the inclusion of the other uses, it is not a reliable measure of trends in metropolitan land use.

Table 2, "Acreage of Land in Special-Use Areas, United States, 1950," has a subclassification of the broad category--non-agricultural uses. From this table it may be observed that in 1950, urban areas occupied about 18,270,000 acres of land, or 17 per cent of the total.

Agricultural land can be classified into three categories: cropland, pasture, and forest or woodland. Of these categories cropland is the most important because: (1) it produces the bulk of the food, and (2) it is the major agricultural land use in most metropolitan areas. The first of these reasons for cropland importance needs no explanation while the latter requires some elaboration.

Metropolitan area land is valuable and cropland yields the highest return on investment of any agricultural land. Therefore, agricultural metropolitan land tends to be used as cropland if suitable. As metropolitan cropland has been converted from agricultural to urban uses, it has been replaced chiefly by plowing up pasture land. Most of the conversion from suitable pasture land to cropland has already taken place in metropolitan areas and now additional cropland in metropolitan areas can be created only by making

Table 2. Acreage of Land in Special-Use Areas, United States: 1950

Use	Thousands of Acres	Per Cent Distribution
Total	105,329	100%
Urban Areas[1]	18,279	17%
Highways and Railroads[2]	22,880	22%
Farmsteads[2]	10,278	10%
Parks[3]	18,751	18%
Wildlife Areas[3]	8,890	8%
National Defense[3]	21,458	20%
Other Special Uses[4]	4,793	5%

[1]Urban areas were estimated by applying the ratios of the urban areas to urban population by states from the 1940 Census to the entire 1950 urban population for all towns and cities having 1,000 or more population, including both incorporated and unincorporated places.

[2]Computed from tables Rural Road Mileage in the U. S. at the end of 1950 by states, United States Public Roads Administration and United States Department of Agr. Misc. Pub. 663; Inventory of Major Land Uses, table 40, pp. 83-84.

[3]Davidson, Rd. D., Federal and State Rural Lands, 1950, U. S. Dept. Agr. Cir. 909, May, 1952, Table 23, pp.90-92, and Table 20, pp. 85-87.

[4]U. S. Dept. Agr. Misc. Pub. 663; Inventory of Major Land Uses, Table 40, pp. 83-84.

Source: H. H. Wooten, Supplement to Major Uses of Land in the United States; Basic Land Use Statistics, 1950, U. S. Dept. of Agr., 1953, Table 12.

extremely large capital outlays for irrigation, drainage, flood control, and other major improvements.

The conversion of land to urban uses is occurring most rapidly in metropolitan areas and, by coincidence, these areas contain some of the most fertile soils of our nation. The importance of the most fertile or Class I soils is demonstrated by the fact that they produce close to 20 per cent of the total crop values but account for only 10 per cent of the nation's cropland and 3.8 per cent of the total land.[9]

About half of the Class I acreage in the nation is concentrated in the Middle Western agricultural heartland--but the other half is largely in and around growing metropolitan areas. These areas are the same ones where conversion to urban uses is on the rampage.

The situation in California serves as an example. About two-thirds of the state's population lives in the two large urban complexes of Los Angeles and the San Francisco Bay Area. It is in these areas that the agricultural losses have been most impressive. By 1957 a total of 58 per cent of the agricultural land in these two metropolitan areas had been taken over by urban uses.[10]

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[9]"The City's Threat to Open Land," Architectural Forum, January, 1958, New York: Time Inc., p. 89.

[10]Howard F. Gregor, "Urban Pressures on California Land," Land Economics, Volume XXXIII, Madison, Wisconsin: University of Wisconsin, p. 311.

In the Los Angeles metropolitan area, 80 per cent of the land is in Class I and Class II soils, and most of the Santa Clara Valley is in Class I soils--70 per cent of which is already in urban use. This becomes even more impressive when it is noted that Class I and Class II soils occupy only 6 per cent of the total area of the state and comprise just 10 per cent of all of its cropland.[11]

Although there can be some interchange between the types of agricultural land, once taken for urban use, the agricultural land almost never reverts to any agricultural uses.[12] For example, metropolitan land may be converted from cropland to pasture or from woodland to pasture, but it is unlikely that it will ever be converted from residential use to cropland.

Table 3, which follows, gives acreage information for the years 1929, 1939, 1949, and 1954 for the total land in farms, cropland, cropland harvested, and non-agricultural land within the metropolitan areas with 100,000 or more inhabitants of the United States. According to these figures, from 1929 to 1949, the total acreage of land in farms in these metropolitan areas increased. In 1949 a high of

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[11]Ibid., p. 317.

[12]Bogue, Op. Cit., p. 3.

63.4 million acres of farm land was reached and since that time there has been a decrease in total farm land in metropolitan areas.

The increase in farm land in metropolitan areas may be explained in part by the land reclamation. Many extensive land reclamation projects have been undertaken in metropolitan areas where demand for land has been high. Examples include irrigation of land too arid for crops in the Southwest and West and drainage of marsh land in Florida and along the Gulf Coast.[13]

The decreases in total land in farms shown in Table 3 may be explained by factors such as population growth, conversion of farm land to urban uses, and the lack of suitable land for reclamation. In other words, there is very little land left in metropolitan areas for new agricultural uses--very little new cropland is available.

In the quarter of a century from 1929 through 1954, there was a loss in standard metropolitan areas of about 4.4 million acres of cropland. During the same period, non-agricultural uses in these metropolitan areas gained in acreage by 6.7 million acres. From this information it would seem logical to assume that a major part of the expanded urban use acreage was supplied at the expense of metropolitan cropland.

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[13]Ibid., pp. 10-11.

Table 3. Selected Land Uses and Changes in Land Use, 1929 - 1954, Within Standard Metropolitan Areas of the United States

Year	Total Farm Land	Cropland	Non-agricultural Land
	(Thousands of Acres)		
1954	62,582	32,932	64,952
1949	63,424	34,753	64,774
Change 1949-54	- 842	- 1,821	178
1949	63,424	34,753	64,774
1939	60,871	39,028	67,327
Change 1939-49	2,553	- 4,275	- 2,553
1939	60,871	39,028	67,327
1929	58,411	37,292	58,229
Change 1929-39	2,460	1,736	9,098
Change 1929-54	4,171	- 4,360	6,723

Source: Adapted from Donald J. Bogue, Metropolitan Growth and the Conversion of Land to Non-agricultural Uses, Table 3, pp. 8-9.

The United States is a well-fed country--one that has experienced agricultural prosperity. Millions of dollars are spent annually on the storage of farm surpluses such as wheat, corn, and cotton. During a period of agricultural

surpluses, why should there be any concern over the loss of productive land? Two reasons for concern over the "land-lost" movement stand paramount.

In the first place, the urbanization movement results in a tremendous loss of very productive land which in turn could result in jeopardizing the nation's food supply. Unfortunately, this rapid population increase and redistribution is occurring chiefly in areas of high productivity. The second reason is almost of equal importance--particularly in a time of prosperity. There is the real danger of destroying the land which produces virtually all of the specialty crops such as citrus fruits, nuts, grapes, and certain vegetables. The farm surpluses which exist are in basic and not specialty crops. Such specialty crops are selective in location because of suitable soil fertility, rainfall (or irrigation), and climate. The combination of these favorable factors would be difficult, if not impossible, to replace. Yet, almost daily, these intensively productive areas feel the squeeze of the tentacles of the urban sprawling octopus.

The conversion of land to non-agricultural uses is but one of the effects of metropolitan growth on agriculture. Additional effects will be discussed in the remainder of the chapter.

Fragmentation of Farms.--The bulk of cropland in metropolitan areas that is lost to urban development comes from farms which for one reason or another are wholly converted to urban use. An important number of farms, however, are crippled but are not instantly killed by this conversion. Frequently, the breaking of farms into small, uneconomical units or fragments damages agricultural production almost as severely as total changes in use.

The web of an adequate highway system cannot be spun economically or feasibly in accordance with property lines. Consequently, the result of highway construction is a number of small fragmented pieces of productive farm land which usually can be reassembled only by using the power of eminent domain. If roads cannot follow property lines, then, fragmentation of farms is certain to occur.

Today miles and miles of highways are being constructed in an all-out effort to solve the transportation problem. These highways, in addition to splintering farms, also gobble up many acres of land. A road with a 100-foot right-of-way takes 12 acres of land per mile. For rights-of-way 150 feet wide, 18 acres per mile are consumed. Parts of the 41,000 mile Interstate System under construction require 300-foot rights-of-way using about 36 acres of land

per mile. Each interchange in this system takes about 10 acres or more--the two or three largest will take up to 300 acres each.[14]

There is a definite conflict between two forces which tug at agricultural land. On one hand is the trend toward larger farms--farms that can take maximum advantage of modern equipment and know-how. On the other is the tendency toward small farms, fragmented by highways and utility networks. Capital outlay for farm equipment today is large; the efficiency of operation of this equipment is decreased if the cropland units are small.

Utility easements also impose certain restrictions upon agricultural land use in metropolitan areas. The types of crops which may be grown on land split by easements are limited somewhat. The growing of beets, lettuce, onions, etc., under high voltage electrical transmission lines may be permissible while the growing of pecans cannot be permitted.

Many non-agricultural uses cut farms into uneconomical agricultural units in metropolitan, as well as rural, areas. The problem is more critical, however, in metropolitan areas because the non-agricultural uses which have this splitting effect are more numerous there.

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[14]W. F. Struber, "Comment on Highways," Panel Discussion on Land Lost, January 23, 1959, p. 3.

Increased Land Values and Increased Taxes.--With the infiltration of urban uses into the rich agricultural land surrounding most metropolitan areas, there is a simultaneous increase in land values. Since urban uses are rapidly spreading throughout metropolitan regions, the farmer discovers that his farm land has suddenly jumped in value--perhaps his first indication of this higher value coming in the form of additional taxes.

How is the value of land determined? How does an increase in value affect the farmer? Do increases in value and increases in taxes go hand-in-hand? These are some of the questions that require a closer look.

The words "value" and "price" have many meanings. Value has been defined as the intrinsic worth of any good or service for satisfying human wants. Price, on the other hand, is simply a measure of value in terms of money.[15]

The main street of any large city takes a person past high-value real estate. Street frontage in downtown areas is a valuable commodity--a foot of this land on the right street is worth as much as some entire farms. For example, some frontage on State Street in Chicago is priced

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[15]William H. Scofield, "How Do You Put A Value On Land?", Land 1958 Yearbook of Agriculture, Washington, D. C.: United States Department of Agriculture, 1958, p. 183.

about 30 thousand dollars per square foot. At that rate, an acre of land would bring 13 million dollars.[16]

The value of urban land is determined by several factors. Among these factors are: location, rate of growth of the area, accessibility, trade area, and the income potential of the property. The value of agricultural land in the path of metropolitan growth is also determined essentially by the same factors. As urban expansion overruns agricultural land, the once-determining factors of land value, such as soil fertility, climate, rainfall, topography, and farm product marketability are replaced by urban value determinants.

The type of farming that must take place in metropolitan areas is intensive because of high land costs and high taxes, while in rural areas, extensive farming is appropriate. Dairy farming illustrates both types of farming quite well. The cows may be housed, milked, and fed in an urban area for this requires relatively little space--an intensive use of land. Grass, concentrates, and roughage for cows, however, require large areas and are grown by extensive farming. The high cost and taxes of metropolitan

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[16]M. Mason Gaffney, "Urban Expansion--Will It Ever Stop?", Land 1958 Yearbook of Agriculture, Washington, D. C.: United States Department of Agriculture, 1958, p. 503.

agricultural land make the assembly of this land into economical extensive farm units impractical and difficult.

Once residential, industrial, or commercial subdivisions break through into agricultural land adjacent to urban uses, each property owner feels that his real estate has urban-use potential. This urban-use anticipation precipitates a flood of zoning amendment petitions, speculation, and production stoppage.

It is reasonable to assume that, as land values increase, there will be an increase also in taxes paid on this property. Farmers, like many other industrialists, operate on a small margin of profit--even when taxes paid are on land assessed as agricultural. If the land is assessed for its urban potential, even though it is still in agricultural use, this increase in taxes may be "the straw that breaks the farmer's back."

Tax assessors in cities cannot avoid assessing property in their domain according to urban standards unless some method is provided them for determining when agricultural land should be assessed for its agricultural function. Research data concerning this question are scarce--almost non-existent; therefore, an equitable method for determining the severance point between agricultural and urban uses for tax purposes has not been developed.

In summary, agricultural land increases in value because of its proximity to urban uses in metropolitan areas. The increase in farmland value is significant to the farmer because of both its beneficial and detrimental effects--higher valued land but simultaneously higher taxes.

Increased Wages and Employment Opportunities.--As urban uses encroach upon prime agricultural land in metropolitan areas, another effect is felt by the jolted farmer. Suddenly he is faced with wage increases for farm labor in order to compete with industrial wages paid by city employment.

Usually the farm worker has previously received low wages for his work and is unskilled and untrained except in farming. Such a fellow welcomes the opportunity for a selection of jobs offered by the metropolitan area. He easily becomes accustomed to the routine 5-day work week. Most intensive agriculture found in metropolitan areas, as a contrast, requires daily attention. For example, even with automation of the dairy farm, the farmer must be on hand at milking time seven days a week.

The more skilled a man on the farm is, the more likely he is to be skilled in city employment. Thus the farmer must pay competitive wages and give the fringe benefits found in city employment or he is unable to obtain

farm labor. Mr. Sidney Truitt, Fulton County (Georgia) Agricultural Agent, has stated that the lack of adequate farm labor around Atlanta has forced more land out of agricultural production than has residential, industrial, or commercial subdivision activity. Wages paid farm labor in the Atlanta Metropolitan Area must be comparable to wages paid in industry and distribution. Thus farmers are forced out of metropolitan agriculture by the city wages and city employment opportunities.

Summary

Metropolitan growth is occurring very rapidly by: (1) population increases and a redistribution of rural and urban inhabitants, and (2) low-density sprawl resulting in larger area requirements for the population. Natural population increases have been occurring in metropolitan areas and this has been supplemented by migration from the country to the city--the urbanization movement.

As metropolitan growth takes place, the agriculture in the region is affected in several ways. Urban encroachment on farm land results in the conversion of agricultural land to urban uses. As adjacent land is converted to urban-type uses, the market value of property increases as well as the taxes paid on this property. The unplanned sprawl of urban development along roads and highways,

accelerated by utility extensions, bisects many farms--leaving highly productive land in fragments too small for economical agricultural operation. Coincident with urban sprawl and metropolitan growth are higher farm wages and increased employment opportunities for farm labor. These are some of the effects of urban growth on agriculture within standard metropolitan areas.

The role of agriculture in such a dynamic environment will be the subject of the following chapter.

CHAPTER II

AGRICULTURE'S ROLE IN AN URBAN ENVIRONMENT

The first chapter of this thesis was devoted to metropolitan growth and the resulting reduction of agricultural land in metropolitan areas. This chapter will explore the question of whether the reduction of agricultural land in metropolitan regions is disadvantageous to the nation. In answering this question, the following will be explored: (1) the amount, character, and distribution of agricultural land in metropolitan regions, (2) the economic contributions made by agriculture to the metropolitan regions, and (3) sociological and psychological considerations.

The Amount, Character, and Distribution of Agricultural Land in Metropolitan Regions

Agricultural land uses exist within virtually every metropolitan area in the United States. While it is true that the intensity of the agricultural production may vary noticeably from one area to another, the importance of agriculture to most metropolitan areas remains unnoticed, but relatively high. This importance of farm land in an urban environment has been overlooked by the citizens, the

public officials, and, even more significantly, by city planners and the agencies and firms they represent--the very people who should be doing the comprehensive planning for the area. Urban land uses have been superimposed upon agriculturally productive land and have been extended beyond political boundaries--through the urban-rural fringe and deep into the heart of the counties surrounding the central city.

The term "metropolitan" carries with it the connotation of possessing certain urban--perhaps even cosmopolitan--characteristics. As a contrast, the phrase "agricultural land use" carries a rural connotation. It does not necessarily follow that a metropolitan area of high urban order will have no agricultural land uses within its boundaries. Perhaps it is a bit ironical, but even within the urban framework of large metropolitan areas, agricultural land comprises a major part of the land-use. In absolute quantity, it is much larger than commercial, industrial, public, and semi-public, or residential uses individually--in fact, agricultural land is almost equivalent to the sum of the other uses. The total land in agriculture in metropolitan areas of 100,000 or more population in 1950 was

63,423,781 acres.[1] This amounts to 49.5 per cent of the total land for all uses in the area.

For comparative purposes, the percentage of land devoted to each major use in both metropolitan and non-metropolitan areas is presented in the following table.

Table 4. Percentages of Major Land Uses in Metropolitan and Non-Metropolitan Areas in 1950

Uses	Metropolitan Areas	Non-Metropolitan Areas
Agricultural Land	49.5%	61.7%
Cropland	27.1%	25.0%
Pasture Land	14.6%	29.9%
Woodland (not pastured)	4.6%	4.5%
Other Farm Land	3.2%	2.3%
Non-Agricultural Land	50.5%	38.3%
Total	100.0%	100.0%

Source: Adapted from Donald J. Bogue, Metropolitan Growth and the Conversion of Land to Non-agricultural Uses, pp. 8-9.

As would be expected, the proportion of land in non-agricultural uses in metropolitan areas is much higher than

[1] Donald J. Bogue, Metropolitan Growth and the Conversion of Land to Non-agricultural Uses, Scripps Foundation for Research in Population Problems, 1956, p. 8.

in non-metropolitan areas. It may be surprising to observe that in spite of the presence of the central city and its many suburbs in each metropolitan area, the proportion of the total land classified as "farm cropland" is higher in metropolitan areas than in non-metropolitan areas. The implication is that the central city and its satellites are located on land that is unusually well-suited for agricultural production--in other words, that metropolitan areas tend to grow on fertile farm land. Additional evidence that this is the case is provided by the following table which indicates the percentage distribution of agricultural land types.

Table 5. Percentage Distribution of Agricultural Land by Type in 1950

Use	Metropolitan Areas	Non-Metropolitan Areas
Total	100.0%	100.0%
Cropland	54.8%	40.5%
Pasture Land	29.5%	48.5%
Woodland (not pastured)	9.3%	7.2%
Other Farm Land	6.5%	3.8%

Source: Donald J. Bogue, Metropolitan Growth and the Conversion of Land to Non-agricultural Uses, p. 8-9.

From Table 5 it can be observed that in non-metropolitan areas only 40.5 per cent of the total agricultural land is cropland while in metropolitan areas, 54.8 per cent is in farm cropland. Donald J. Bogue argues that in the vicinity of a large urban market there is a stronger incentive to convert pasture land to the more intensive use of cropland.[2]

It would seem logical that since the value of metropolitan land is closely correlated with the proximity of the central city's business district, the nearer the agricultural land is to the heart of the city, the more intensive the farming has to be. Obviously, high-value land requires high-value crops and livestock--intensive type farming--in order to receive an equitable return on capital investments. Another special factor is the perishability of the product. Certainly it is desirable to grow perishable products as close to the market as is practical. For example, where an item is highly perishable, industry may locate near the market regardless of cost.[3]

On the other hand, extensive-type farming such as cotton, wheat, corn production, and the raising of beef

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[2]Bogue, Op. Cit., p. 9.

[3]Richard U. Ratcliff, Urban Land Economics, New York: McGraw-Hill Book Company, Inc., 1949, p. 38.

cattle must be carried on at greater distances from the population centers than intensive-type farming. This extensive-type of agriculture normally occurs at greater distances because vast acreages are required to make the use of expensive farm machinery economical.

Bogue's argument that pasture land is converted to agricultural cropland in the vicinity of an urban market is supported by Robert E. Dickinson in an article, "The Regional Relations of the City."

> The effect of the modern city on the rural land uses and the crops grown in its environs is related to two basic trends: first, the orientation of commercialized farm output towards the city market; secondly, the effect of the spread of the urban area on the values of open land around it.[4]

In an effort to minimize the friction of space between the urban market and the location of agricultural production activities, much intensive farming occurs within the confines of the metropolitan areas. The location of commercialized horticulture near cities is due to the high price of land as well as the proximity of an immediate market. For the same reason, the demand of the urban market for fresh milk has a marked influence on the development of dairy farming in the vicinity of cities, irrespective of climate and soil.

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[4]Robert E. Dickinson, "The Regional Relations of the City," Cities and Society, p. 270.

Agricultural production is dependent upon a number of factors among which are the value of land and the availability of a market. The intensity of the agricultural activities is dependent, to a great extent, upon these two factors. Since land in metropolitan areas is usually high in economic value and close to a ready market, the type of farming within these areas tends to be intensive.

Economic Contributions of Agriculture to Metropolitan Areas

The central city of certain metropolitan areas of this country serves as the hub of agricultural activity for the district. In these areas agriculture is one of the chief industries which forms the foundation for the economic base. If land-use planners are to successfully survey the contributions which agriculture makes to metropolitan areas, objective measures of these contributions must be utilized. What are the economic contributions made by agriculture to metropolitan areas? The answer to this question holds one of the keys to consideration of the importance of agriculture as a land use in metropolitan areas. The co-determinants of the future role of agriculture in the rapidly urbanizing metropolitan centers are: (1) its capacity to contribute to the economy of the area, and (2) its ability to market its product.

Value of Agricultural Land and Buildings as a Measure of Contribution.--In order to ascertain the value of agricultural land and buildings in metropolitan areas, it has been necessary to select at random several metropolitan areas in various geographical and economic regions. For the purposes of this study, the United States was divided into thirteen economic regions. For comparative purposes, two metropolitan areas were chosen at random from each economic region. These metropolitan areas are listed in Table 6.

The second and third columns of this table show the value of agricultural land and buildings in the selected metropolitan areas for the years 1950 and 1954 respectively. It should be noted that in 1950 there was a wide range of values from the low in Savannah of $5.6 million to the high in Minneapolis - St. Paul of $434.1 million. By 1954 this range had increased from $7.8 million in Savannah to $563.9 million in Denver. These figures are indicative of the importance of agricultural property in the respective metropolitan areas.

The average value of farm land and buildings in metropolitan areas serves as an indication of their significance. In 1950 the average value of agricultural land and buildings in the selected metropolitan areas was $104.2 million per metropolitan area--even with the low-valued Southern areas

Table 6. Value of Agricultural Land and Buildings in 1950 and 1954 and Value of All Farm Products in 1949 and 1954 by Selected Metropolitan Areas

Metropolitan Area	Value of Agricultural Land and Buildings		Value of All Farm Products	
	1950	1954	1949	1954
Albuquerque	$ 14,587,000	$ 24,254,000	$ 2,941,000	$ 3,367,000
Asheville	33,723,000	32,363,000	4,033,000	5,365,000
Atlanta	134,740,000	194,385,000	7,087,000	9.613,000
Baltimore	154,497,000	182,728,000	16,299,000	15,985,000
Charlotte	31,990,000	38,371,000	4,474,000	4,844,000
Cleveland	110,190,000	107,522,000	12,931,000	13,393,000
Denver	406,944,000	563,861,000	34,880,000	37,861,000
Des Moines	67,919,000	82,891,000	16,829,000	17,194,000
Ft. Worth	65,777,000	89,765,000	12,638,000	10,269,000
Lancaster, Pa.	163,231,000	212,395,000	69,681,000	80,151,000
Jacksonville	12,323,000	16,569,000	6,213,000	8,372,000
Madison	116,744,000	119,915,000	40,664,000	37,845,000
Milwaukee	28,310,000	30,338,000	5,334,000	6,536,000
Minneapolis-St.Paul	434,083,000	522,611,000	33,902,000	34,273,000
Nashville	39,738,000	33,542,000	5,498,000	4,538,000
Phoenix	187,169,000	308,708,000	92,191,000	155,646,000
Portland, Me.	20,095,000	17,441,000	7,176,000	7,723,000
Salt Lake City	44,782,000	53,779,000	9,620,000	12,133,000
San Jose	222,367,000	417,290,000	49,987,000	76,862,000
Savannah	5,628,000	7,778,000	1,852,000	1,776,000
Seattle	240,595,000	294,251,000	30,392,000	29,871,000
Shreveport	27,550,000	30,002,000	8,891,000	8,585,000
Spokane	85,878,000	114,983,000	16,169,000	22,422,000
Springfield	38,398,000	50,272,000	11,156,000	12,974,000
Syracuse	38,524,000	36,597,000	15,158,000	13,157,000
Wichita	82,312,000	103,770,000	12,768,000	16,226,000
Total	2,808,094,000	3,677,381,000	528,764,000	646,981,000

Source: Adapted from The 1954 Census of Agriculture, United States Department of Agriculture, 1955.

included. By 1954 this average value had increased to $141.4 million or by 35.7 per cent. The Census of Agriculture for 1959 has not yet been tabulated so this information is not now available.

Value of Agricultural Products from Metropolitan Areas.--Just as data concerning the value of agricultural land and buildings have been collected for a sample of metropolitan areas--data have also been assembled for the value of farm products within these same metropolitan areas. This information may be found also in Table 6.

Once again, a wide range of values is apparent. Savannah, Georgia, had farm products valued in 1949 at $1.9 million while Phoenix, Arizona, produced farm products valued at $92.2 million. By 1954 the range of values ranged from the low of $1.8 million in Savannah to a high of $155.6 million in Phoenix.

The value of all farm products produced in the selected sample metropolitan areas averaged $20.3 million per metropolitan area in 1949 and increased by 22.7 per cent by 1954 to an average of $24.9 million. Any basic industry that contributes this heavily to the economy of the region must be considered in the comprehensive plans for the area.

Additional Economic Contributions.--In addition to the economic

contributions which agriculture makes to metropolitan regions in the form of taxable property and multi-million dollar farm products, there are three other contributions. These additional contributions are: (1) employment, (2) service industries, and (3) a vital product, namely food.

Although agricultural employment is of more importance in certain metropolitan areas, practically all metropolitan areas have a significant number of farmers. For example, in 1954 in the Atlanta metropolitan area, a distribution center consisting of three counties, about 2 per cent of the labor force was employed directly in farming.[5]

The intensive types of agriculture--the only ones which can compete with other land uses because of high land values--tend to be heavy labor users. In areas which are geared to economic activities other than agriculture, agricultural production must compete with wages paid in these other activities.

A second economic contribution is that of service industries which are needed because of activity in agriculture, a basic industry. Mr. J. W. Fanning, Head of the Agricultural Economic Department of the University of Georgia, states that in Georgia the market value of farm products has increased by about 300 per cent by the time these products reach the

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[5]The 1954 Census of Agriculture, United States Department of Agriculture, 1955, adapted for use.

consumers.[6] The difference between the original market prices paid by the consumer for the farm products provides a living for thousands of people in industry, services, professions, and other groups.

Although the market value of the farm products sold directly from the source is important, the economic impact is expanded by the additional employment of people and capital in the transformation of farm products to consumer products. Many people are employed in the processing, handling, packaging, freezing, and marketing of these agricultural products between the time they are grown and the time they reach the consumer. Additional capital and people are used in providing services and products demanded for the farming activities of the area. Representative of these services and products are the chemicals, fertilizers, machinery, repairs, and research needed for efficient agricultural production.

The third contribution of major importance is that of a vital product--food. While it is true that agricultural surpluses in certain commodities are being stockpiled, other products are not being produced in sufficient quantity or quality to meet an ever-increasing demand. The family income of the people of the United States is steadily rising and as the incomes are raised, more money is available for the purchase

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[6] J. W. Fanning, in an address to the Municipal Association District Conference in Georgia.

of specialty foods. The land producing these specialty crops is decreasing at alarming rates due to urbanization, urban sprawl, and fragmentation and scatteration of farm land.

The agricultural situation in California illustrates the contribution being made by agriculture in metropolitan areas of high productivity and with favorable climatic conditions. The most productive soils of California, Class I, are concentrated in the valleys of the Bay Area and around Los Angeles. These are rapidly urbanizing areas.

For many years California has led the nation in the value of its farm products. This may seem surprising since the state has only 3 per cent of the nation's farms. However, these few farms produce 25 per cent of the nation's table food, 42 per cent of the nation's tree-nut and fruit crops, and 43 per cent of its fresh vegetables.[7] California is famous for the "gold rush," and yet, all the gold ever found in the state would not equal the value of one year's agricultural yield.[8]

If the people of California are concerned about the jeopardy of agricultural land which produces specialty foods when the state has a present population of 15 million, then

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[7] Green Gold, A Proposal for a Pilot Experiment in Conservation of Agricultural Open Space, County of Santa Clara Planning Department, 1958, unpaged.

[8] Ibid., unpaged.

the problem may receive national attention if population projections hold true and California has 30 million inhabitants by 1990.[9]

In summary, it may be said that the economic contribution of agriculture to metropolitan areas takes many forms. Agricultural land and buildings in metropolitan areas of the United States are important as a part of the tax digest of these areas. The monetary value of agricultural products grown in metropolitan areas totals several billion dollars annually. This value includes livestock and livestock products, crops, and forest products. Farm labor employment is important to varying degrees. The service industries which are related to agricultural production expand many times the employment, capital, and products of agriculture. An increasing national economy places emphasis on the demand for specialty crops which are being produced in metropolitan areas. For the above economic reasons, recognition of the existence of agricultural land uses within metropolitan areas is important.

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[9] Ibid., unpaged.

Sociological and Psychological Considerations

In determining the role of agriculture in an urban environment, not only the use of the land is important but also the people who control this land. By taking a brief look at some of the characteristics of farmers in metropolitan areas, some insight might be gained as to their significance.

The nature of rural life has been revolutionized, and its position in the national economy and culture has been deflated. The farming neighborhood has been almost literally jerked out of isolation and thrown into contact with world culture. With increasing urbanization, the relative prestige of rural institutions and attitudes has markedly declined. This trend has been emphasized by Paul H. Landis:

> The nation's past is one of rural experience; its present is a blending of ruralism and urbanism, the latter holding the dominant place. . .and at the same time encroaching on the more psychological aspects of behavior, making deep inroads into the mores, customs, and traditions of the people.[10]

Agricultural Way of Life.--In the exploding expansion of metropolitan areas the over-run farmers usually suffer from an inability to adjust rapidly enough to an urban way of life.

Traditionally the farmer has played a dominant role in an agrarian society. He is respected because of his agri-

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[10]Paul H. Landis, Rural Life in Process, New York: McGraw-Hill, 1940, Chapter 21, p. 153.

cultural abilities, his household rule, and his religious faith. The yardstick which measures a farmer's community leadership is rural in nature--one unacceptable to an urban society. In contrast, the urban society stereotypes the farmer as ignorant, stubborn, uncultured, and unimportant--thus, he is identified as a part of the lower-class in class stratification.

Today even in rural areas, the people are uncertain as to their fate. Agriculture in these areas was once a "way-of-life." Now, for the great bulk of production in this country, agriculture is just another business.[11]

The agricultural "way-of-life" is difficult to define, but some characteristics of it are readily apparent. The farmer in a rural environment is a leader and thus exerts his dominance while the same individual in an urban complex tends to become subdominant, uncertain, and a follower rather than a leader. The cultural unit in a rural area is the family, because originally the family was an economic as well as an educational and social unit. Churches and religion have traditionally played an important role in the agricultural society--thus the farmer retains his religious ties wherever he may be located. Since agricultural success depends in part on individual initiative and in part on

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[11]Stuart Chase, The Economy of Abundance, New York: MacMillan Company, 1934, p. 235.

factors beyond personal control, the farmer has built up confidence in his abilities, and consequently, is resistant to changes of any type. In other words, the farmer must be assisted by those concerned if his problems are to be solved when he goes to the city or the city grows to him.

In addition to centering around the family as a cultural unit, the agricultural way-of-life places tremendous emphasis on the church and religion. The rural population has provided the major support of the Christian church, especially of the Protestant Church. The latter has been the center of social life in the American rural community. Country dwellers long remained relatively immune to the discoveries in scholarship which undermined traditional views of the Bible and religion. Hence, they have been a bulwark of Christian orthodoxy.[12] Protestants controlled rural areas, as Catholics dominated many urban regions during the last seventy-five years.[13]

Country folk have been noted in the past for their resistance to change. No single factor is responsible for this resistance but it may be attributable to several factors. Rural religious beliefs tend to eulogize hard work but all too often the traditional industriousness of the areas lacked any intelligent direction. Related to this industriousness

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[12]Harry Elmer Barnes, Society in Transition, Prentice-Hall, Inc., New York: 1952, p. 329.

[13]Ibid., p. 334.

was a marked tendency to rely upon personal intuition and private opinion. The farmer was suspicious of the expert--this made it difficult to introduce scientific knowledge and a planned economy into rural communities.

The conditions of rural life encourage both personal and cultural isolation. This produces a hostility to anything new and different but at the same time promotes a feeling of individualism and personal re ponsibility and also stimulates the resourcefulness of the farmer. The farmer often achieves a personal versatility and confidence unknown to the urbanite because the farmer must face a variety of agricultural and mechanical tasks.

Farmers have had to work hard to obtain a mere living--any additional gain was an important item in his life.

> Since his property existed in concrete things, such as land, buildings, and animals, rather than in paper claims to ownership, as in the case of urban security holders, the farmer had a robust sense of private property rights. . .The property sense and a strong spirit of individuality constituted powerful obstacles even to the development of cooperation among farmers.[14]

Although farmers have tended to resist change in the last decade, perhaps no other segment of the American economy has experienced and accepted more change than farmers. The apparent resistance to change in the rural population is not without reason, nor is it the result of short-term occurrences.

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[14]Ibid., p. 341.

Regardless of whether the farmer lives and works in the city or the country, the problem of unconscious resistance to change remains with the individual farmer and must be faced by sociologists and planners alike.

City - County Relationships in Metropolitan Areas.--Counties have traditionally been oriented toward an agrarian way-of-life. Each standard metropolitan area includes within its boundary at least one county or the equivalent.[15] Many states permit and encourage joint city-county planning commissions, which in theory, plan for the development of the entire region. Frequently, in reality, however, these planning commissions become urban-oriented. This tendency toward urban orientation has been somewhat accelerated by the grant of federal funds for urban planning.[16] Most of the comprehensive plans for metropolitan areas do not even include a category for agricultural land use, although this use accounts for about half of the total land area--this is especially important when the central city serves as the agricultural market for the region.

Recognition of the fact that the farmers in the area do have problems would have a tremendous psychological effect.

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[15] In New England town lines have been used by the Bureau of the Census instead of county lines to define standard metropolitan areas.

[16] The Housing Act of 1954 as amended permits grants for planning only within the urban areas of a county; however, the Housing Act of 1959 permits planning on a much broader scope.

The recognition of those people who are rurally oriented is important for two reasons. First, such recognition would provide the stepping stone for the path of the farmer as he attempts to adjust to the new urban environment. Second, the farmers within the urban fringe support the rurally dominant leaders who have control of the state governments from which all cities receive their powers of existence. Soothing the wounds of the socially injured farmer in the hinterland would probably be a great stride forward toward a city-county bond of unity.

The controls which cities impose upon the fringe areas perhaps damage the social relationships between city and county folk more than any other one thing. The rural-urban fringe is a transition zone between the concentrations of people and structures that are classified as towns and cities and the areas that are predominantly in agricultural use.[17] It is the fringe area that provides the space for urban expansion, and the land in this territory is in various stages of ripening for conversion to strictly urban use and for absorption by the city.[18] The use of urban subdivision regulations for the fringe alienates those people in the area when no consideration is given to the existing development patterns or uses.

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[17]R. D. McKenzie, The Metropolitan Community, New York: McGraw-Hill Book Company, Inc., 1933, p. 76.

[18]Richard U. Ratcliff, Urban Land Economics, New York: McGraw-Hill Book Company, Inc., 1949, p. 52.

Zoning as a land-use control has been attempted for rural areas but often little study is given prior to its use for the central city's fringe of the metropolitan areas. Zoning and other controls must be used carefully and with discretion--this is especially true for the urban-rural fringe areas. The people who occupy this area are a mixture of truck farmers, home owners who work in the city, junk dealers, and others, some urbanites, some farmers, and some native and natural to the periphery.[19]

"Cities have a great stake in the development of adjacent unincorporated areas, which are today asking for city services and which have a strong social and economic unity with the city."[20] In considering the city as a functional entity that has emerged to serve the needs of modern Western civilization, the hinterland areas of the central city must be treated as functional parts of the city itself.[21]

The problem of adjustment and change in values must be faced if the rural individual forced to contend with the city is to be socially accepted in his new environment.

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[19] Ibid., p. 49.

[20] A Check List for the Review of Local Subdivision Controls, Washington, D. C.: National Housing Agency, 1947, p. 8.

[21] Ratcliff, Op. Cit., p. 53.

Agriculture as Open Space or a Greenbelt

Agriculture is important in many metropolitan areas because of its productive features. In many instances, however, its productive qualities are limited, but even then agricultural land has an important role to play in metropolitan areas--it can be used as a greenbelt or open space.

The idea of greenbelts is not new in this country or in Europe. In the early 1930's three "Greenbelt Cities" were planned and built as a part of the public works program. These cities are: Greenbelt, Maryland; Greenhills, Ohio; and Greendale, Wisconsin. The Greenbelt program proposed "a system of rural economy coordinated with the land-use plan for the rural portions of the tract surrounding the suburban community."[22]

In Greenbelt, Maryland, a suburb of the national capital, the idea of open space or a system of greenbelts has been carried out but very little of this open land is now used for agriculture.

The two other cities, however, have been much more successful in using their open land for farming. At Greenhills, Ohio, about 4,000 acres are in agricultural use.[23] There are

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[22]Osborn, Frederic James, Green-belt Cities, London: Faber and Faber Limited, 1946, p. 131.

[23]Stein, Clarence S., Toward New Towns of America, New York: Reinhold Publishing Corporation, 1957, p. 131.

34 old farms used as suburban residences with one to 20 acres each, but the greater part of the land is occupied by 28 full-time farmers, whose products are chiefly dairy.[24] Although a farmers' market was originally proposed, the dairymen have tended almost entirely to market their milk, eggs, poultry, and vegetables in the bigger centers at Cincinnati.

In Greendale, Wisconsin, about 1,700 acres are currently zoned for agriculture and of this area, approximately 500 acres are being used for crop production.[25]

In Greenhills, the unity of town and country has been of mutual advantage to the urban and rural population. Farms, dairies, and forests form a familiar part of the daily life of the town children and their parents. Town and farm folks have come to know each other as neighbors, friends, and associates.

The situation in Britain is slightly different from the one in this country. Productive agricultural land is extremely limited and, therefore, any greenbelt which contains productive land is utilized for agricultural production. Ebenezer Howard has expressed some ideas concerning Garden Cities. One of the main components of Howard's Garden City idea is: "Town and Country Relationship: The town area to

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[24] Ibid., p. 131.

[25] Letter from John M. Kuglitsch, Village Manager, dated February 19, 1960.

be defined, and a large area around it reserved permanently for agriculture; thus enabling the farm people to be assured of a nearby market and cultural center, and the town people to have the benefit of a country situation."[26]

The British Government decided a few years ago to establish some new towns as a planned program of decentralization of London. In establishing these new towns and using Howard's Garden City idea, many sites were rejected because of their value for agriculture.[27]

Many plans for the development of metropolitan areas of the United States have recognized the need for open spaces. Very few of these plans, however, have included the possibilities of using fertile farm land as a part of the greenbelt or public open space system. Certainly the idea has some merit and while it will not meet the needs for open space in all metropolitan areas--in some it may accomplish the two-fold mission of retaining agricultural land and at the same time providing a pleasant country-like atmosphere for urban centers.

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[26]Osborn, Op. Cit., p. 33.

[27]Rodwin, Lloyd, The British New Town Policy, Cambridge: Harvard University Press, 1956, p. 41.

Summary

For the most part, agriculture has been ignored by city planners as an appropriate use for metropolitan land. In spite of the lack of consideration, agricultural land uses account for approximately one-half of the total standard metropolitan land areas of the United States. This is almost as much land as the combined remaining uses.

Metropolitan agricultural uses contribute directly, through products grown, several billion dollars annually to metropolitan economies. The indirect economic contribution of this basic industry is perhaps three times as great. In addition, farm land and buildings form a major share of the tax base.

While the economic role which agriculture plays in specific metropolitan areas is very important because of productivity, another important role which metropolitan agriculture can play may be as natural open space. The need for open space in cities has been recognized and some of this space may well be used for agricultural production. The advantages of open space will thus be retained and a return can be received from specialty crop production in certain metropolitan areas.

Planners, officials, and citizens alike have failed to recognize the role of agriculture in metropolitan areas.

Agriculture in metropolitan areas can only take its rightful place as the result of much study, consideration, and recognition of the role it plays in the metropolitan complex.

CHAPTER III

POLICIES FOR THE PRESERVATION OF AGRICULTURAL LAND

In the preceding chapter the role of agriculture in an urban environment was explored. From this study it was concluded that in some, but not all, metropolitan areas, agriculture makes an important economic contribution to the region. In other areas the preservation of agriculture is important not primarily for economic reasons but as a greenbelt or open natural space. If there is any validity in the argument that for one or the other of these reasons agriculture is important in metropolitan areas and should be preserved, then some methods of preserving this land use must be investigated. The purpose of this chapter is to explore some of the policies which can be used to preserve agricultural land in metropolitan regions.

Zoning

One of the tools which can be used to shape the development pattern of an area is zoning. Cities have been using this tool for many years but rural communities have been rather reluctant to use it. Different situations require

tailoring of this police power regulation if it is to accomplish its objective--a compatible pattern of land uses for the mutual benefit of all the community.

The use of zoning for the preservation of agricultural land is the subject of this section of the thesis. The possibilities and limitations of the use of this power as it applies to agricultural land in metropolitan areas will be explored.

County Zoning.--Zoning, like any other ordinance, can be no stronger than its enforcement. The governmental organization of cities has been one generally conducive to enforcement; therefore, cities have heretofore been able to use zoning more effectively than counties. More and more, however, counties are setting up the vital administrative machinery so that they, too, can effectively use the power to zone.

County zoning is not of recent origin. As early as 1923 the Wisconsin legislature authorized county zoning but only for urban land uses such as commercial establishments and industries.[1] It was not until 1929 that counties were authorized to zone the use of rural lands for agriculture, forest, and recreation. Between 1923 and 1929 county zoning ordinances in Wisconsin were used only to guide industrial

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[1]Walter Rowlands, Fred Trenk, Raymond Penn, Rural Zoning in Wisconsin, Agricultural Experiment Station, Bulletin 479, University of Wisconsin, Madison, Wisconsin: November 1949, p. 3.

and residential development adjacent to cities. The 1929 enabling legislation authorized counties to ". . .determine the areas in which agriculture, forestry, and recreation may be conducted, the location of roads, schools. . ."[2] This legislation was the result of a recommendation of the Interior Committee on Forestry and Public Lands of the 1927 Wisconsin legislature and was designed primarily to meet the needs of the northern Wisconsin counties.

After extensive investigation and public hearings the Committee reported:

> Both the orderly development of northern Wisconsin, and the need for reducing expenditures because of tax delinquency, require that counties be given the authority to control development. Counties should have the right to give every possible aid in agricultural zones with the aim of building up prosperous farming communities.[3]

One of the important objectives in county zoning is the regulation of land use to secure the best utilization of natural resources not only in terms of money but also in terms of human life and happiness. County boards in Wisconsin have prohibited agriculture in forest districts because of heavy public costs resulting from furnishing isolated settlers with schools, roads, and transportation. They have found that it is much more economical to purchase isolated marginal farms and relocate the families on productive soil than it is to furnish them with public utilities and services.

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[2] Ibid., p. 5.

[3] Ibid., p. 5.

This type of zoning is intended to encourage farming on productive land and discourage it on submarginal land. The approach is an application of the "highest and best use" criteria often used in urban zoning.

Although the oldest county zoning ordinances are found in Wisconsin, counties in other states are beginning to use this regulation for guidance and preservation of agricultural land. In spite of the success of county zoning in Wisconsin, Michigan, and Minnesota, it may be surprising to know that by 1949 only 173 counties in 23 states had adopted rural zoning ordinances.[4]

Recently, counties in the state of California have been faced with the realization that prime agricultural land would be annihilated unless steps were taken to thwart the sprawling onslaught of urban development. Various attempts to use county zoning have been made by these counties. In Kern County, California, for example, the County Zoning Ordinance establishes a Light Agricultural Zone as well as a General Agricultural Zone.[5] Agricultural land uses are emphasized as permitted uses in these zones but other residential development within the zones is not prohibited. The

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[4]Gregor, Op. Cit., p. 321.

[5]Official Land Use Zoning Ordinance, Kern County, California, 1957, pp. 19-21.

result has been the continued destruction of prime agricultural land and scattered development.

Perhaps the most effective attempt at protecting agricultural land through county zoning is the exclusive agricultural county zoning ordinance in effect in Santa Clara County, California--part of the San Jose metropolitan area. A policy statement approved by the Planning Commission and the Board of Supervisors in a Joint Study Session in December, 1957, states the purpose of exclusive agricultural zoning in Santa Clara County as follows:

> Agricultural zoning is intended to protect prime agricultural soil and valid agricultural enterprises. It is intended to be applied in accordance with a master plan of land use based on soil quality and other factors pertinent to the conservation of agriculture. Its effect is to restrict and control the infiltration of urban development into areas generally devoted to agriculture so that the continuance of this activity may be assured for the foreseeable future.[6]

The exclusive agricultural zone permits uses which run the gamut of legitimate farming from pigeon farming to dairying and from artichoke raising to orchard culture. The outstanding feature, however, that contrasts this zone with other agriculture zones is that, in this district, industry, commercial development, and housing--except for farmers and farm workers--are prohibited.

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[6]Exclusive Agricultural Zoning, "A Statement of Policy," County of Santa Clara Planning Department, San Jose, California, February, 1958, p. 1.

Exclusive agricultural zoning has gained the support of the farmers and owners in the areas to be included in such a district. This support has been obtained chiefly because of the policy of requiring a petition from the owners in an area to be zoned for exclusive agriculture prior to the zoning amendment. Other criteria which must be met before land can be zoned for exclusive agriculture are: (1) land must be used predominantly for agriculture, (2) soil must be productive, and (3) area must be designated for agriculture on the master or comprehensive land use plan.

How effective has this exclusive agricultural zoning been in Santa Clara County? Perhaps this question is best answered by an excerpt from the statement of findings of a Subcommittee on Planning and Zoning of the General Assembly of California. The subcommittee investigation indicates that, "The operation of the Santa Clara County exclusive agricultural zoning ordinance has been generally favorable. The ordinance plus the State Greenbelt Law have, for the time being, protected nearly 20,000 acres of prime agricultural land from premature, unplanned, and economically wasteful subdivision."[7] An explanation of the State Greenbelt Law may be found on page 64. It should be noted that at the time of the subcommittee's investigation, exclusive agricultural

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[7]State Greenbelt Legislation and the Problem of Urban Encroachment on California Agriculture. Preliminary Report of the Subcommittee on Planning and Zoning, Assembly of the State of California, 1957, p. 10.

zoning in Santa Clara County had been in existence only about two years.

Zoning as a tool for the preservation of agricultural land has been used in other countries. For example, under the Urban Development Act of 1949 adopted by Copenhagen, Denmark, areas within the region must be zoned as follows:

1. Areas immediately open for development.
2. Areas where development should not take place within a 15 year period.
3. Areas to be preserved for agricultural and gardening purposes, with building activity permitted only in connection with the mentioned purposes and special permits required for the building of summer houses.[8]

Standard Metropolitan Areas in this country are composed of counties, and therefore, the county as a local governmental unit appears to be the logical choice for land use control in these areas. County zoning has been discussed as it exists in two areas of this nation since the most progress has been made chiefly in these areas. For the preservation of prime agricultural land, the exclusive agricultural zone seems to offer the greatest zoning possibility. Zoning can be very effective as a device for agricultural protection, but it must be supplemented by

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[8]Glahn, Borgue, "Copenhagen's Finger Plan," reprinted from September, 1952, The American City, New York: Buttenheim Publishing Corporation, p. 3.

other tools if encroaching urbanization is to be guided toward less productive land.

Tax Policies

One of the urban pressures which is accelerating urban development penetration into prime metropolitan farm land is that of increased taxes. As urban sprawl encroaches upon agricultural land, a farmer's tax bill begins to rise, even though he may have done nothing to encourage this urban development. Property taxes rise in such a situation in two ways. First, farm land that becomes surrounded by subdivisions increases in market value. Naturally, an increase in market value results in an increase in taxes paid on the assessed value. Second, taxes on agricultural land in rapidly expanding urban areas may increase even if the assessed valuation remains the same. The demand for services such as roads, schools, police protection, fire protection, and sewers is the result of increases in the number of new families in adjacent subdivisions. The cost of these services cannot be assessed against the residents of new subdivisions alone. All taxable property in the district must share in the cost. Many people feel that land-use controls must be accompanied by adjustments in tax policies if agricultural land is to be preserved. In other words, ". . .land-use

controls must be supplemented by tax and other measures which will make it economically feasible for farmers to continue in business."[9]

In order to be able to use some type of tax advantage for agricultural land designated for conservation, careful study of current tax assessment procedures as well as study of state constitutions will be mandatory. The value of property is commonly derived in three different ways: (1) replacement costs or market appraisal, (2) capitalization of income, and (3) comparative sales analysis. If land-use controls were employed which would prevent the land from being used in certain ways, then those prohibited uses could not be considered in ascertaining the value of the property for tax purposes.

In most situations even when agricultural land is zoned exclusively for agriculture, the local governmental policy is to tax at valuation placed on the land for urban uses. In Santa Clara County, California, for example, the county assessor states that: "The market value of these (agricultural) properties must be ascertained by the same tests as any other class of property."[10] "These 'tests' assume that the 'highest and best' use of land in a

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[9]State Greenbelt Legislation and the Problem of Urban Encroachment on California Agriculture, p. 11.

[10]Exclusive Agricultural Zoning, Op. Cit., p. 14.

metropolitan area is, in almost every case, an urban use."[11]

In California, nevertheless, an attempt has been made by the Legislature to grant tax relief to property zoned exclusively for agriculture. Section 402.5 of the Revenue and Taxation Code reads:

> In assessing property which is zoned and used exclusively for agricultural or recreational purposes, and as to which there is no reasonable probability of the removal or modification of the zoning restriction within the near future, the assessor shall consider no factors other than those relative to such use.[12]

The assessment of farm lands on the basis of agricultural use rather than on the basis of potential subdivision property has been declared invalid by the Howard County, Maryland, circuit court.

A law passed by the 1957 Maryland Legislature says, "Lands which are actively devoted to farm or agricultural use shall be assessed on the basis of such use, and shall not be assessed as if subdivided or on any other basis . . ." In the unreported decision in the case of Gales v. State Tax Commission, decided May 16, 1959, the court held that the Maryland provision was invalid because of lack of uniformity. This decision may prevent additional attempts to use this form of tax relief for farmers in metropolitan areas.

Most people who advocate the use of tax advantage or

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[11] State Greenbelt Legislation, Op. Cit., p. 11.

[12] Exclusive Agricultural Zoning, Op. Cit., p. 12.

subsidies see advantages in some form of deferred taxes. A system of deferred taxes has been used successfully in several states for the conservation of forest lands. New Hampshire, Wisconsin, Michigan, and California conserve forest lands and reduce pressures on the owners to cut timber prematurely by deferring a portion of the annual tax on the land.[13] The accrued deferral comes due as a lump sum "severance tax" when the timber crop is harvested. In some cases the state advances the deferred tax to the local governments from an established revolving fund. In Wisconsin, county-owned land can be entered in the program and for each county-owned acre, the state makes annual payments in lieu of taxes.[14]

The use of a severance tax as a method for preserving agricultural land has some merit. For example, the difference between the tax on the land for agricultural use and as a residential subdivision might be annually deferred until the use was converted from agriculture to residences. At the time of conversion, the accumulated deferred taxes would come due as a severance tax.

If the land continued to be used for agriculture instead of being converted to urban uses, a point would eventually

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[13]"How to Keep Land Open: Some Useful Precedents," Architectural Forum, Time, Inc., New York: January 1958, p. 164.

[14]Rowlands, Trenk, Penn, Op. Cit., p. 27.

be reached when the severance tax on the property would equal its value. The land from then on would remain permanently in agriculture for the severance tax would be greater than the property value. If permanent retention in agriculture is not the objective, then a maximum severance tax should be established--perhaps 80 per cent of the value would be appropriate.

This system of deferred taxes may be a means of bringing together tax policies and exclusive agricultural or other open-land zoning with the anticipated possible result being a permanent postponement of development, accompanied by its annually larger "penalty" of lump severance tax.[15]

The use of agricultural land for orchards poses a different problem because of the interim years between the time the seedlings are set and the bearing age of the trees. In such a situation deferred taxes may be appropriate. However, Mr. Karl Belser, Santa Clara County, Planning Director, offers a word of caution:

> In order to safeguard the farmer, the extent of this lien should never exceed a certain percentage of the income from the land for agricultural purposes. Otherwise this land might soon become tax delinquent, however, it should be stripped of its urban development rights before being sold and returned to the tax rolls.[16]

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[15]"How to Keep Land Open: Some Useful Precedents," Op. Cit., p. 164.

[16]Belser, Karl J., "First Class Soil for Posterity," an address before the annual meeting of the Soil Conservation Society of America, Asilomar, August, 1957, p.9.

In an attempt to adapt this procedure of deferred taxation to complement such controls as zoning for the preservation of open space in urban areas, Mr. Charles Eliot has had introduced in the Massachusetts legislature a bill providing for the postponement of part of the landowners' property taxes. In brief, it envisions this procedure:

> An owner who wishes to keep his land open applies to the local assessor to have his land listed as "Classified Open Land." After the tax assessor and the local planning agencies determine that the land is indeed restricted against development, a certificate is issued to the owner and recorded with the Register of Deeds. Thereafter, the landowner receives a rebate of the real property taxes assessed upon the fair market value of the land; for the first three years, 90 per cent; for the succeeding seven years, 70 per cent; and thereafter, 50 per cent. If the restrictions to keep the land open are relaxed, the landowner has to pay back the accumulated tax rebates. These provisions would go with the land, and if there is a change of title, the new owner will be under the same obligation.[17]

Although this bill represents a basically sound idea, many refinements remain to be worked out.

There are many variations in tax policy which could be used effectively to assist in the preservation of agricultural lan' in metropolitan areas. The details of such policies remain to be completed by tax experts. Reliance upon tax policy, however, as the principal instrument for agricultural open space conservation should not be made.

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[17] Whyte, William H., Jr., Development Rights--A Report on a Tool for the Conservation of Open Spaces, unpublished manuscript, 1958, unpaged.

"Mabel Walker, Head of the Tax Institute of Princeton, New Jersey, warns that this would very likely prove too complex."[18] A sound tax policy should complement other measures if it is to be used for the preservation of agricultural land in metropolitan areas.

Greenbelts and Other Open Space

The idea of Greenbelts is not new although thus far its use has been somewhat limited. Some of the attempts to use the "greenbelt" in this country and in Britain were discussed in Chapter II. This idea has been a limited success as a way to preserve open natural space but in order to use this policy for the preservation of prime agricultural land, it must be given a slightly different orientation.

The British New Towns Policy incorporated the use of greenbelts, but in Great Britain the governmental structure is quite different from the structure found in this country. The democratic processes differ somewhat in these two countries. For example, the Ministry in Great Britain can ride rough-shod over the citizens in an area in order to establish a "planned" new town.

A method for obtaining and controlling land for use as a greenbelt must accompany any policy for establishing

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[18] Ibid., unpaged.

this land use. It is insufficient to establish a policy and leave to chance the methods for accomplishing the desired results. Since the establishment in the early 1930's of the "Greenbelt Cities" previously described, very few attempts to use greenbelts for agriculture have been made in the United States. However, the State of California has enacted a Greenbelt Law. This law represents the most recent thinking in this country of a method to assist in the preservation of valuable agricultural land in metropolitan areas.

The Greenbelt Law of California is a pioneering effort in legislative measures--it combines the use of "exclusive agricultural zoning and limitations on annexation of land so zoned."[19] In the 1955 legislative session, this law was passed with a two-year limitation in order to put this conservation measure on trial. The trial appeared to be successful and in 1957 the law became permanent.

The law in its present amended form is as follows:

> Any territory which is by consent of the owners zoned and restricted for agricultural purposes exclusively pursuant to a master plan for land use in the county shall not, while it is so zoned, be annexed to the city . . . without the consent of the owners of the land in the territory which is proposed to be annexed.[20]

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[19]State Greenbelt Legislation, Op. Cit., p. 9.

[20]Exclusive Agricultural Zoning, Op. Cit., p. 10.

The people who have used these measures agree that while they form the cornerstone of present agricultural conservation policy--they do not go far enough. The result of this bill is that agricultural land will be preserved, providing the following conditions are met: (1) the rancher desires not to be annexed and continues ranching, (2) the farmer does not get a variance permit to subdivide or sell to a subdivider, and (3) the farmer is able to continue economic farming operations to permit him to stay in business.[21]

Although agricultural land cannot be annexed if it meets the requirements of the law, such land will increase in value as the tide of urbanization foams around the area. This increased value can possibly mean increased taxation with the likely result of forcing the rancher to sell his land for subdivision. In such a situation the possibilities of some form of tax policy seem applicable.

The continued use of this form of greenbelt policy, therefore, is limited because: (1) the retention of the land in agriculture is dependent upon the discretion of the individual farmer, (2) the rancher is protected only against

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[21] Doyle, Donald, "Views of a Legislator on Agricultural Zoning," an address delivered to Statewide Agricultural Zoning Conference, San Francisco, California, January 27, 1956, p. 3.

annexation and thus city regulation and tax assessment, (3) a master plan for land use must be in existence, and (4) a rancher's taxes may rise even when given this protection.

As more experience is gained with the use of present greenbelt policies in this country, gradually this measure may evolve into a policy which can retain the advantages of agriculture.

Public Ownership

One of the surest methods to preserve prime agricultural land is by governmental ownership. The United States spends billions of dollars annually on agricultural programs of one type or another--but this money is frequently spent in an effort to make farming profitable in areas of marginal productivity. The possibilities of channeling a small portion of this current expenditure to the preservation of prime agricultural land--a good share of which is in metropolitan areas--should certainly be explored.

The Federal Government has seen the need to preserve certain other features of this country. It would seem logical to extend this preservation to land that produces specialty food for the nation's population. While it is unquestioned that food can be produced under simulated conditions through the use of chemicals, radioactivity, irrigation, and artificial light, the costs of wholesale

production using these methods and the resulting tasteless products deter their use. Approximately 29 National Parks containin 13 million acres of land have been set aside in order to preserve their scenic, recreation, and wilderness values for future generations.[22] In addition, 83 National Monument sites have been identified and purchased, and the United States Government owns and operates 149 National Forests comprising some 180 million acres of land, in order to make wise use of such resources as timber, minerals, grazing land, and water supply.[23] Food is no less important!

In a proposal for a pilot experiment in the conservation of agricultural open space, entitled Green Gold, which was prepared by the Santa Clara County Planning Department in California, it was suggested:

> . . .that a national (or at least a statewide) solution be undertaken through a pilot experiment to create permanent agricultural reserves. It would be logical for the United States Department of Agriculture or the California Department of Natural Resources to conduct such an experiment. Santa Clara County, where heroic action has been taken to save valuable farm lands from expanding urbanization, is suggested as one locale where such a pilot experiment could well be started.

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[22]Green Gold, A Proposal for a Pilot Experiment in the Conservation of Agricultural Open Space, Santa Clara County Planning Department, unpaged.

[23]Ibid., unpaged.

Governmental ownership removes valuable land from the local tax base. In order to offset this substantial handicap, perhaps the National Government could make payments in lieu of taxes to the local governments which might suffer somewhat from loss of taxable property.

Although the loss of the specialty products on the national market will become serious if prime agricultural land continues to be lost to urban sprawl, the loss of irreplacable land in metropolitan certain areas may be more keenly felt by the economy of the state in which this loss occurrs than by the nation. For this reason it might be well to establish state agricultural preserves first. If this solution were to prove effective, the necessity for National ownership might be postponed--perhaps, removed. At the same time, since taxable property would be removed from the tax digest, payments in lieu of taxes could be made to the local governments.

The third level of government which could purchase land for agricultural preserves is the local community. There are several ways in which this idea could work on the local level. First, each county which comprises the metropolitan area could negotiate for the ownership of land within its boundary, and yet, do so in accordance with a metropolitan plan for such preserves. This system would have the

distinct advantage of allowing each county government to handle the transactions within its political boundaries. By the same token, however, it would have an obvious disadvantage of being ineffective if all of the county governments were not in complete agreement with the proposals.

A second method for preserving prime agricultural land in urban regions is to authorize the central city to control agricultural preserves in accordance with a metropolitan plan. In order to use this system it would be necessary, of course, to pass state enabling legislation which would grant to the central city the power to purchase this land extra-territorially. From a legal and from a political standpoint, the possibility of using this form of control does not offer much encouragement.

A third way to accomplish agricultural preserves through governmental ownership would be through the use of a metropolitan open space authority whose responsibility would be to purchase selected agricultural land. While there are disadvantages to the use of authorities, two distinct advantages are offered for their use in this particular situation: (1) political boundaries would not be barriers in the development of an agricultural greenbelt, and (2) the financing of this project would not jeopardize the bonding capacity of any individual government. The

authority could be financed by appropriations from the participating governments.

Governmental ownership offers the big advantage of being able to obtain the land that is essential for the preservation of prime agricultural land. After selection of the farm land to be conserved has been made, assurance that that particular land can be acquired is through the use of the power of eminent domain. Given adequate legislation and proper procedures, the only legal question to be answered remains: Is agricultural land preservation a public use?

The courts, heretofore, have not been in complete agreement concerning the definition of "public use." However, the need for an elastic concept of the power of eminent domain has been recognized by the Supreme Court. When the national government undertook a program of conservation, flood control, and wildlife management under the National Industrial Recovery Act, its power to condemn land was challenged in many districts. Uniformly, the right of the government to condemn needed land was upheld. The District Court for the Western District of New York, finding that the program was designed to conserve natural resources and was charged with grave national interests, quoted from the Supreme Court decision in Helvering v. Davis, 301 U. S. 619 (1937) as follows: "Nor is the concept of

general welfare static . . . what is critical and urgent changes with the times."[24]

In a similar manner, the court in 1938 in Dornan v. Philadelphia Housing Authority, 331 Pa. 209 at 225, 200A. 834 (1938) said:

> . . . the courts . . . contend that 'public use' means 'public advantage', and anything which tends to enlarge the resources, increase the industrial energies, and promote the productive power of any considerable number of the inhabitants of a section of the state, or which leads to the growth of towns and creation of new resources for the employment of capital and labor, manifestly contributes to the general welfare and the prosperity of the whole community, and, giving the constitution a broad and comprehensive interpretation, constitutes a public use.

Two basic advantages to the use of the power of eminent domain for acquisition of land for the preservation of agriculture are: (1) the ability to assemble land that otherwise could not be assembled into economical units, and (2) the ability to subdivide land appropriately and place it back into individual hands for agricultural use.

It is of interest to note that there are some cases in which the constitutionality of statutes, the object of which was to effect transfers of ownership, was sustained. Thus, in State ex. rel. States Reclamation Board v. Clausen, 110 Wash. 525, 188 P. 538, 14 A.L.R. 1133, it was held to be a valid public purpose for the State to purchase and

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[24]Woodbury, Coleman, ed., Urban Redevelopment: Problems and Practices, Chicago: The University of Chicago Press, 1953, p. 489.

and improve tracts of undeveloped agricultural lands and subdivide and dispose of them to individual farmers and settlers. In People of Puerto Rico v. Eastern Sugar Associates, 1 Cir. 156 F. 2d 316, certiorari denied 67 S. Ct. 190, it was held that the prohibition against taking property without due process of law was not violated by an act which, in order to establish a scheme of agrarian reform, authorized the condemnation of land by a Land Authority for the sole purpose of subdividing and disposing of it to individuals for homesteads and farms. After reviewing the legislative findings of the need for the taking and the evils it was intended to alleviate, the court pointed out that eminent domain need not rest upon the power to protect the public health, and could properly be exercised to promote the prosperity of the community [25]

Since public ownership only provides the land for agricultural production in metropolitan areas, an important next step is the provision of a method for assuring the use of this acquired land. Generally, there are two ways that this might occur: (1) by a lease-back arrangement with individual farmers, and (2) by selling the land after the incorporation of deed restrictions which would prevent subdivision of the land for urban use.

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[25] Ibid., p. 491.

The use of a lease-back arrangement has, without doubt, the advantage of assuring that the land will be used for the intended purpose. It also has the advantage of permitting the farmer who knows the characteristics of the land to use the land for production. This method also prevents forcing land out of agricultural production because of increased taxes. Concurrently, however, it has the disadvantage of removing property from the tax base. The courts have ruled in favor of a lease-back arrangement. For example, the Supreme Dourt of Pennsylvania ruled in favor of a lease-back arrangement of land in Williams v. Samuel, 332 Pa. 265, 2d 834 (1938), and a California court approved a direct contract between the state and a private company for the lease-purchase of public property in Dean v. Kushel, 35 Cal. 2d 521 (1951).

Another way in which the objective may be achieved is by selling the land back to private individuals after deed restrictions have been placed on the land. This method would enable the local government to retain the land in the tax digest and at the same time prevent the subdivision of the land for urban uses such as residences, commercial establishments, and industry.

Purchase of Easements or Development Rights

Another method of preserving agricultural land in metropolitan areas is through the purchase of easements or development rights. There are definite advantages to using the term "easements" instead of "development rights" although the two are interchangeable. Easements are not new since they have been purchased or dedicated for years and used successfully. People are familiar with the public purchase of sewer, water, electric transmission, railroad, and pedestrian easements. In addition, the use of the phrase "development rights" has the connotation of taking most of the rights from the property and thus would probably meet with bitter opposition in most instances. While it is true that after the purchase of these agricultural easements, the land cannot be used for subdivision--the blow might be somewhat softened by refraining from the use of the term "development rights."

In theory the acquisition of agricultural easements would involve the payment to the farmer for the differential between the value of his land for residential or other appropriate subdivision purposes and its value for agriculture. "This, over a period of years, could produce a substantial block of land in private ownership paying private taxes on a basis of its established use with no

potential whatever for development beyond this point."[26] If a change in the conditions which necessitated the easement were to occur, the government holding the easement could at that time release the land for development in the public interest.

Easements as a method of maintaining open space have been used to a limited extent with success. This method has been tried by the Maryland and Ohio state highway departments with contrasting results. For example, in Maryland the highway department has the power to condemn property, thereby acquiring roadside easements or development rights. The acquisition of these easements was chiefly in already urbanized areas. The results of this method were unsatisfactory since, "The acquisition costs of the easements were almost as high as the cost of the land itself and yet owners were antagonistic."[27] Ohio, on the other hand, has been acquiring highway development rights and easements, called "reservation rights" in rural areas only, and by negotiation--not condemnation. Costs have been remarkably low ($5 per acre) and the department regards the program as a success.[28]

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[26]Karl Belser, Op. Cit., p. 9.

[27]"How to Keep Land Open: Some Useful Precedents," Op. Cit., p. 88.

[28]Ibid., p. 88.

Easements have also been used in the creation of open space around airports--both civilian and military. The Civil Aeronautical Administration regulations require, within a five year period, the provision of extensive open space beyond runways at new federally-aided airports. The accomplishment of this objective may be through the purchase of easements or outright purchase of the land.

The military services have been both successful and unsuccessful in using easements in the vicinity of air bases in order to retain open land. The Navy, for example, is acquiring 32,000 acres of land for a new jet airfield at Lemoore, California. A circumference of privately owned land protected from urban development by easements purchased by condemnation will be included in this large area. This agricultural greenbelt will serve as a safety zone adjacent to the airfield. However, ". . . in Suffolk County, L. I., Navy attempts to acquire development easements for 21,000 acres, including a resort community, aroused great hostility; the proposal was tabled."[29]

The policy of using easements or purchase of development rights as a method of preserving prime agricultural land in metropolitan areas has many merits. It should be kept in mind, however, that if this method or any other is

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[29] Ibid., p. 164.

to function effectively, careful study should be made of the objectives and the land so designated must fully meet established criteria.

Incorporation

One policy which is being used in some areas for the preservation of agricultural land is that of incorporation. Very few states permit incorporation of agricultural cities. California is one of the states which permits this type of incorporation. Assemblyman Doyle of California said,

> It should be noted that the use of incorporation statutes in this situation is far afield from the supposed legislative intent to permit incorporation in order to render urban type services. On the other hand, it most certainly is serving its purpose in a democratic manner to protect the interests of the people making use of incorporation.[30]

California currently has four such agricultural cities--namely, Dairy Valley and Cypress in Los Angeles County, Cupertino in Santa Clara County, and Dairyland in Orange County. Only recently have these areas resorted to this method of protection from urbanization.

The reasons for using the incorporation method to solve the agricultural land use problem are four-fold:

1. On incorporation, the new city gets sole control of the zoning within its respective boundaries.

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[30]Doyle, Op. Cit., p. 3.

2. Purported encroachment by adjacent cities, through annexation, is prevented, whether the "greenbelt law" applies or not.

3. The level of services, and thereby the cost to the landowner, can be controlled by the new city.

4. Agricultural use of the land is desired by the land owners and will thus be retained.

It should be noted, however, that there are at least three defects in this policy which will eventually render it ineffective. These are:

1. Very few states have adopted legislation granting this incorporation power.

2. While city tax rates can be held down, the county rates under most state constitutions must be levied at the true value of the property. In effect, this means that for county tax purposes, such cities will be assessed at rates similar to those in the surrounding area.

3. The contemplated low service level will permit little or no local planning within the area.

The cities in California which are using this method of preservation contract with the county for the demanded services. Since this method appears to have only limited application, it can be concluded that it offers little hope for the preservation of prime agricultural land. Because of

the nature of these cities, it is problematical how long farm owners can withstand the development offers.

Conservation Districts

Conservation districts of various types and forms have been established for many years. Frequently, conservation districts for flood control, timber protection, and soil erosion prevention (either by wind or water) have been used in different regions of the United States. This may be a possible but unlikely method of preserving prime agricultural land in metropolitan areas.

Most conservancy districts were established as public corporations with taxing power, acquisition power through the use of eminent domain, assessment power, and borrowing power. "The genesis of the conservation district idea was the cooperative 'drainage district' system established by farmers; in turn, the Conservancy Districts were forerunners of the rural U. S. Conservation Districts, sponsored by the U. S. Department of Agriculture."[31]

Conservancy Districts were established in Ohio in 1914 primarily for flood control. The largest of these districts is Muskingum, which has created ten lakes and owns

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[31]"How to Keep Land Open: Some Useful Precedents," Op. Cit., p. 164.

60,000 acres of land for watershed and flood control.[32] This watershed is used for recreation, farming, and timber.

Another example of the use of a conservation district may be found in the Soil Conservation Districts of Colorado which use land-use ordinances. One type of land-use ordinance in effect requires specified practices to abate soil blowing, and another type prohibits the ploughing of certain types of land except upon permission. From experiences in Colorado, it has been learned that:

> Ordinances are adopted and repealed by democratic processes. As a practical matter, then, restrictions in land-use regulations must be reasonable in the eyes of a large majority of the local people. For an ordinance to be reasonable, its language must be specific rather than general and its application must be definitely determinable.[33]

Conservation districts were conceived as being rural in nature, and therefore, their orientation will have to be completely changed before this method of preservation of agricultural land in metropolitan areas will accomplish its objective.

Directed Settlement

One very effective and positive way to control subdivision activity in an area and thus guide or direct growth

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[32] Ibid., p. 164.

[33] Voelker, Stanley, Land-Use Ordinances of Soil Conservation Districts in Colorado, Colorado Agricultural Experiment Station, March, 1952, p. 53.

is by the use of a planned public policy for utility extension. By a positive policy of utility extension, areas which are agriculturally important can be avoided and therefore made less attractive for urban uses--the objective is indirectly achieved. Areas will grow where good roads, good utility service, and community facilities are available. The Water Department of the City of Atlanta has adopted the slogan--"Atlanta Grows Where Water Goes." Needless to say, this tends to be true.

Cities and counties are finding that they receive dividends for having a strong policy for extending water and sewers. Santa Rosa, California, for example, has an agreement with Sonoma County to direct growth toward areas which are likely to soon be annexed into the city. The city indicates where it will extend water and sewers and the county prevents, by sanitary and zoning controls, subdivision development elsewhere.[34]

Denver, Colorado, has adopted a policy of extending water lines only within a limited area surrounding the city. Outside of this area, the city will guarantee no water rights; therefore, development is directed.

Unfortunately, the metropolitan areas that are using the idea of a strong public policy for extending utilities

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[34]"How to Keep Land Open: Some Useful Precedents," Op. Cit., p. 164.

and thereby guiding growth have done so chiefly because of reasons other than the preservation of prime agricultural land. If this method is used in conjunction with a well prepared plan for development, it appears to offer many advantages. Observations concerning this method are:

1. It is a positive planned policy.
2. People are less likely to be opposed if the choice of development direction is made in accordance with logical and sound criteria which are evident.
3. It can be effective if properly administered.
4. This method may be a common bond for city and county folks.
5. The use of this policy may require the supplemental use of regulations.

Summary

If the assumption is made that it is desirable to preserve agricultural land in metropolitan areas, then some of the policies which can be used for this purpose must be explored. The policies discussed in this chapter are: zoning, tax advantages, greenbelts, public ownership, purchase of easements or development rights, incorporation, conservation districts, and directed settlement. Prior to the use of any of these methods, it is mandatory that proper enabling legislation be enacted by the state and a plan be prepared by the appropriate body.

Certain of these policies show little promise for the preservation of prime metropolitan farm land--namely, incorporation and conservation districts. While incorporation is currently working in California, it appears to be temporary in nature and thus, will soon succumb to urban pressures for development. Since conservation districts were conceived as being rural in nature, they must be re-oriented before being used for a metropolitan function.

All of the remaining six policies offer definite possibilities for the accomplishment of the objective--natural open space to be used for agricultural production. It should be kept clearly in mind, however, that no specific one of these policies can by itself permanently preserve prime agricultural land. Different situations in different metropolitan regions will require tailoring of these policies and new ones if they are to be effective.

CHAPTER IV

PLANNING FOR AGRICULTURE IN METROPOLITAN AREAS

The United States is rapidly becoming a country of cities. This country is growing, and most of this growth is occurring in metropolitan areas. The metropolitan areas of this nation are increasing in size--both in geographical area and in population. As the tentacles of urban uses sprawl into the countryside, the agriculture within the region feels the squeeze of urban growth. This metropolitan growth and the effect which it has on agriculture were discussed earlier in this thesis.

What is the role of agriculture in an urban environment? A large portion of the land in standard metropolitan areas is currently used for agriculture--almost one-half of the total land. The ownership of much of this metropolitan farm land is in the hands of individuals who are rurally oriented. Since most state legislatures are controlled by the agricultural interest groups, the importance of metropolitan farm land and its ownership cannot be overlooked.

Land that is well suited to growing crops--prime agricultural land--also frequently grows cities. Naturally,

the loss of highly productive land to the urbanization movement is much greater in some regions of this country than it is in others. For example, California is the leading agricultural state of this nation, and it is also experiencing very rapid urbanization at the expense of prime agricultural land.

In other regions agriculture may be insignificant for its specialty crop production. Its importance, however, may be manifest in its use as natural open space--a relief from the concrete and steel towers and the sea of asphalt.

Recognition of agriculture as a legitimate metropolitan land use would have a good psychological effect upon city and county relationship within the region. The importance of this feature should not be minimized.

Many suggestions have been offered for the preservation of metropolitan agricultural land. Although various policies have been tried in different areas of the country, no single policy offers an unlimited solution to the problem of agricultural conservation in metropolitan areas.

Conclusions

From the research and study which have been devoted to this study of agricultural land use in metropolitan areas, several general conclusions can be made:

1. The movement of large numbers of people to the metropolitan areas--*urbanization--and the movement* of people away from the center of the city--suburbanization--have usurped many acres of highly productive, intensively used agricultural land.

2. Agricultural land that is converted to urban or non-agricultural uses almost never returns to agriculture. Very little land remains available for reclamation since the demand for urban land is high and much land has already been drained or irrigated. The other source of replacement is duplication of natural conditions and at this time this method is impractical and uneconomical.

3. Few areas are cognizant that a problem of diminishing prime agricultural land for high value specialty crops exists and even fewer governments have taken measures to alleviate this problem.

4. The role that agriculture plays in a specific metropolitan area varies widely depending upon a combination of the following factors:

a. Topographical features of the land.

b. Soil classification as to productivity.

c. Economic function of the central city or cities.

d. Market center facilities and activities.

e. Labor supply--both farm and city.

5. Simply stated, the role of agriculture in metropolitan areas may be:

a. To produce agricultural products. These products must be produced by intensive type farming since this form is necessitated by high land values and labor costs in urban areas. Metropolitan agricultural production includes the growing of specialty crops such as vegetables, citrus fruits, nuts, and other fruits as well as the production of certain dairy, poultry, and livestock products.

b. To provide natural open space, perhaps in the form of a greenbelt or wedge, agriculture as a land use in greenbelts seems quite logical. By using greenbelt land for agriculture, three objectives would be achieved: (1) natural open space would be maintained; (2) prime agricultural land could form a part of the greenbelt system, thereby preserving this valuable resource; and (3) the open-space function of this land could be supplemented by its use for agricultural production.

c. To provide a common goal for city and county joint governmental action. Both city and county governments gain from the consideration of agriculture

as a metropolitan land use. First, the urban complex receives much-needed open space, and second, the rural people living in the area receive recognition of their activity.

6. Most planners are guilty of negligence in their failure to explore the possibilities of including agriculture as a land-use category in development plans for metropolitan regions.

7. Agriculture is important as a land use in most metropolitan areas, and therefore, plans for the development of these areas should include consideration of this use.

8. The pressures to subdivide farm land for urban uses such as residential, industrial, and commercial, are too great to expect individual land owners to retain their land for agricultural production without public assistance.

9. Assuming that the preservation of agriculture as a land use in metropolitan areas is worthwhile, very few methods have been utilized for this purpose. Frequently the devices which have been used for preserving agricultural land were originally designed for other purposes. The use of California's incorporation law is an example.

Recommendations for Planning Agricultural Land Use in Metropolitan Areas

Basically, there are three levels on which the problem of agricultural preservation as a land use in metropolitan areas must be attacked. These are the national level, the state level, and the local metropolitan or regional level, which includes both city and county governments. There are several policies which, if adopted by these governments, would complement each other for the preservation of prime agricultural land in metropolitan areas.

National Policies.--The Federal Government of the United States must establish policies and take positive steps of action for the preservation of prime agricultural land in those situations which are beyond the jurisdiction of local or state governments or which are beyond the capabilities and responsibilities of these governments. The following policies and action are hereby recommended to be adopted and undertaken by the Federal government:

1. A study of the national land use needs and requirements for the future should be made and related to specific states, regions, and areas. Agriculturists have been concerned primarily with the problems of food supply and agricultural land use needs on a national basis, but little or no study has been made of the national demands that will be

made upon specific states or regions. Without this information, state plans for agricultural preservation and production can only reflect anticipated state and local needs. The Federal government has the machinery in existence to undertake such a study since population projections are constantly being made and the United States Department of Agriculture is organized to compile information on the agricultural situation in each area of the country.

2. The United States Department of Agriculture should assist state governments in the establishment of criteria to be used in the determination of land that is desirable and suitable for preservation because of its productive characteristics. Federal assistance in establishing these criteria will give the local governments the benefit of excellent technical personnel who otherwise would be unavailable.

3. Federal funds should be made available for use by state, regional, and metropolitan planning agencies for the preparation of detailed plans for the preservation of agricultural land uses. These funds could easily be made available under the existing 701 programs if regional offices of Housing and Home Finance Agency were made to realize the importance of these studies. It is doubtful if funds could currently be used for this purpose since the required studies would be somewhat unusual.

4. If there are areas of national importance which are producing specialty crops under conditions difficult to duplicate and these areas are succumbing to urban expansion, then the national government should establish a policy for the preservation of this land. In situations of this type the policy which seems most appropriate is the establishment of planned agricultural open spaces by purchasing the land either by negotiation or condemnation. Provision should be made at the same time for payments to local governments in lieu of taxes and for the leasing of this land for agricultural production to private individuals under terms suitable to both the government and the lessee.

5. In situations that arise out of the sprawl of metropolitan areas across state boundaries, the Federal government has the responsibility and jurisdiction to assist in the preparation of plans for these areas and in settling any disputes which might arise. Since the fringes of metropolitan areas frequently have rural characteristics and because such a large percentage of the land in standard metropolitan areas is classified as agricultural, it would seem appropriate to use the United States Department of Agriculture for the preparation of plans for the preservation of agriculture in multi-state areas. A small, competent technical staff could be used for this service. Once the plans for the area have been prepared and the machinery

established for implementation, the responsibility for carrying out the plans could be left with the state and local governments. The planning staff should remain available for consulting purposes.

State Policies.--Unregulated urban growth is a state-wide phenomenon. The protection of valuable agricultural land requires a state-wide policy and a state-wide plan for agricultural land conservation, consistent with the needs of an expanding urban population, in addition to local metropolitan plans and policies. The existence of state-wide agricultural conservation plans and policies in no way minimizes the responsibility and duty of local governments to establish local programs. The following recommendations are made with regard to state plans and policies.

1. Each state needs an agency which can carry on the function of planning the land uses within its jurisdiction. Such an agency would function as a staff--advising the governor, legislatures, and state departments. In many states this might well be a State Planning Agency.

2. An inventory of the agricultural land on a state-wide basis should be conducted. This inventory should, of course, include a classification of the soils within metropolitan regions. The information thus gathered could be used for determining which land should be conserved. Local

communities could adopt the regulations necessary to accomplish the objective.

3. Another study to be made by the state planning agency is the determination of what constitutes economical farming units in the state--perhaps even delineating specific regions within the state if it were found that the size of units varied. If agriculture is to remain as a land use in metropolitan areas, the units of land preserved must be of a size to permit economical farming.

4. Standards and criteria for the determination of land to be preserved for agriculture in the urban-rural fringes of metropolitan areas are desperately needed to guide both private enterprise and public agencies in making decisions. Agricultural land-use planning is not a problem which can be solved by agricultural people alone. It requires urban-rural cooperation as does any development plan for a metropolitan area.

5. State-wide land-use planning is essential for proper growth patterns. This type of planning would of necessity be broad-stroke and generalized, but it could form the framework on which each area would build the detailed local plans toward over-all objectives.

6. In order to give maximum flexibility to local governments who would establish the policies for their jurisdictions, a review of the enabling legislation is necessary.

In many cases existing powers can be used for the preservation of agricultural land, but in others, new legislation is required before meaningful policies can be adopted.

7. The use of tax policies as supplements to other policies for the conservation of farm land will require, in many instances, constitutional amendments. Metropolitan farm land assessment procedures must be reviewed before changes in them can be equitably made.

Local Policies.--The cities and counties which comprise standard metropolitan areas can do a number of things to plan for and protect valuable agricultural land within their boundaries if this seems appropriate. Since these governments are faced with day-to-day decisions concerning subdivision activity and development, or lack of development, the burden of carrying out policies and plan implementation rests squarely upon their shoulders. The following recommendations are made in an effort to assist local governments in the carrying out of their duties.

1. In metropolitan areas or regions, it is important to establish and support an agency which can prepare plans for the entire region. If an area does not have such a staff agency, one should be created.

2. The regional or metropolitan planning agency should conduct a study of the agricultural situation in its specific

region as a part of the comprehensive plan for development. This study should determine:

a. The importance or unimportance of agricultural production in the area.

b. The local need and desire for greenbelts or other open spaces.

c. The possibilities of using agricultural land as a part of the open space system if needed.

3. If criteria for the determination of land suitable for agricultural preservation have not been developed, the local governments should establish these criteria.

4. The metropolitan development plans should include areas designated for agriculture if previous studies reveal that agriculture is important either because of production or as open space.

5. In those regions where agricultural conservation is desirable or necessary, and assuming that state enabling legislation permits their use, the following policies are recommended:

A policy for the establishment of planned greenbelts or other open space is mandatory. Such a policy can be used to achieve the preservation of productive land or to provide areas of natural rural environment. In order to implement this policy and at the same time control urban development,

the following additional measures are needed. These may be used separately but they show more promise if used in appropriate conjunction with one another.

a. Exclusive agricultural zoning which prohibits urban type development including residential.

b. A positive plan for the extension of utilities into selected areas and not elsewhere.

c. Purchase of agricultural easements in unique situations.

d. Public acquisition of property for the purpose of incorporating deed restrictions and then resale to private individuals.

e. Public ownership--limited to unique situations--with lease-back provisions.

f. Deferred taxation as a supplement to the immediate preceding a., c., and d.

Specific Steps for Planners

The land-use planner who is responsible for advising the local governments as to the feasibility and desirability of agriculture as a metropolitan land use should:

1. Ascertain the role of agriculture in his planning area by investigating:

a. Land capabilities for production.

b. Soil characteristics.

c. Crops being produced.

d. Farm products being imported from other areas.

e. Possibilities for locally producing imported farm products.

f. Economic value of agricultural products, land, and buildings.

g. Agricultural service industries.

2. Determine if agriculture is being encroached upon by urban development.

3. Consider the designation of areas that are suitable for urban growth but which are agriculturally less productive.

4. Survey the open space available and the needs for additional open space.

5. Consider the possibilities for agricultural conservation areas--perhaps differentiating between intensive and extensive agriculture.

6. Plan for the mutual benefit of both the city and the rural fringes of the metropolitan area.

Summary

The problem of urban encroachment on agricultural land must be faced, in varying degrees, by virtually every metropolitan area of this nation. The demand for food which is produced in these areas is increasing with each rise in the standard of living of Americans. Private citizens, city

and regional planners, and elected officials must no longer wait until disaster threatens--for valuable agricultural land when converted to urban uses will not be returned to agriculture.

Donald Doyle, a California legislator, said in an address at a Statewide Agricultural Zoning Conference:

> Planning is the key to the whole situation. It is an absolute necessity on all levels of government and for our purpose today, it is especially necessary from the State level, right down to the local level. And yet, except for a few instances, we don't have adequate planning on any level of government. Professional planning people will readily admit to this. At the same time, I will wholeheartedly state that the fault lies not with professional planners but rather with us laymen. We have failed to give them the support needed which in turn would enable them to do their job. Any number of vintage papers and textbooks, and even early 1930 California planning statutes, eviscerated as they were, will give ample evidence to support the planners' case against us.[1]

However, professional planners, too, are guilty of negligence in failing to prepare plans which reflect the objectives of the people and which can be implemented by them. This omission need not be extended to cover the oversight of the importance of the basic industry--agriculture.

"Every metropolitan area presents a special case, and only detailed consideration of the intricacies and idio-

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[1]Donald Doyle, "Views of a Legislator on Agricultural Zoning," An address delivered before the Statewide Agricultural Zoning Conference, San Francisco, January 27, 1956, p. 1.

syncrasies of a specific local situation can produce a 'plan' that is both desirable and feasible."[2] Planners must work diligently to find solutions to the problem of urban encroachment on valuable agricultural land. Agriculture is a land use in metropolitan areas--sound planning will include provisions for retaining such an important use.

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[2]Banfield, Edward C., and Morton Grodzins, Government and Housing in Metropolitan Areas, New York: McGraw-Hill Book Company, Inc., 1958, p. 157.

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